CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Letter of Transmittal

CITY FACILITIES ARCHITECTURAL SERVICES DIVISION
200 EAST SANTA CLARA STREET, T6
SAN JOSE, CALIFORNIA 95113-1905
tel (408) 535-8350
fax (408) 292-6288

TO:	SUBJECTS:
Akoni Danielsen, Principal Planner City of San Jose, Department of Planning, Building and Code Enforcement Environmental Review Section 200 East Santa Clara Street, T3 San Jose, CA 95113-1905	Story Rd. Mitigation Site No. 2, which contains off-site mitigation plantings for the following bridge construction project: • Oakland Rd. Bridge Replacement Project PP96-123
DATE: 2-12-09	**CITY OF SAN JOSE CIP PROJECT DATABASE FILE NO:** 3046

WE ARE SENDING YOU:

- [x] Attached
- [ ] Shop drawings
- [ ] Prints
- [ ] Copy of letter
- [ ] Under separate cover via _____ the following items:
  - [ ] Plans
  - [ ] Specifications
  - [ ] Change order
  - [ ] Samples
  - [ ] CPM Schedule
  - [x] Other: Report booklet

COPIES	DATE	NO.	DESCRIPTION
1	12-15-08	23	Story Rd. Mitigation Site No. 2 Environmental Mitigation Monitoring Report Year 4 (2008)

THESE ARE TRANSMITTED as checked below:

- [ ] For approval
- [ ] For your use
- [ ] As requested
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- [x] Other: As required
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REMARKS:

Dear Akoni:

Attached are your copies of the Annual Environmental Monitoring Report for the Story Rd. Mitigation Site No. 2. Please call me if you have any questions at (408) 793-4148.

SINCERELY,

Gabrielle E. Wilder
Associate Landscape Architect

Old Oakland Road Habitat Mitigation Project
Story Road Mitigation Site #2

Year 4 (2008) Monitoring Report

Biotic Resources Group

Biotic Assessments ◆ Resource Management ◆ Permitting

Biotic Resources Group
Biotic Assessments ◆ Resource Management ◆ Permitting

Old Oakland Road Habitat Mitigation Project
Story Road Mitigation Site #2

Year 4 (2008) Monitoring Report

Prepared for:

Central Coast Wilds

And

Ms. Gabrielle Wilder
City of San Jose Department of Public Works
City Facilities Architectural Services
200 E. Santa Clara Street
San Jose, CA 95113

Prepared by:
Biotic Resources Group
Kathleen Lyons, Plant Ecologist

December 15, 2008

2551 South Rodeo Gulch Road #12 ◆ Soquel, California 95073 ◆ (831) 476-4803 ◆ brg@cruzio.com

OLD OAKLAND ROAD HABITAT MITIGATION PROJECT
STORY ROAD MITIGATION SITE No. 2

HABITAT MITIGATION MONITORING REPORT

YEAR 4 (2008)

EXECUTIVE SUMMARY

The Old Oakland Road Habitat Mitigation Project at the Story Road Mitigation Site No. 2 encompasses 1.65 acres in central San Jose. The project area consists of riparian revegetation area immediately southwest of Coyote Creek. The site is accessed from Story Road, approximately 0.75 mile west of State Highway 101. The project site provides riparian mitigation for the Oakland Road Bridge Widening project that was implemented by the City of San Jose.

The City of San Jose and State and Federal regulatory agencies approved off-site mitigation for this construction project through the replacement of 1.65 acres of upland riparian woodland habitat at the Story Road Mitigation Site No. 2 (*Oakland Road Bridge Widening Mitigation and Monitoring Program,* H.T. Harvey & Associates, November 12, 1997). Pursuant to project permits, the Old Oakland Road Habitat Mitigation Project site must be established and meet performance criteria during Years 1-10. Yearly monitoring reports (Years 1-6, Year 8 and Year 10) are required to be submitted to regulatory agencies following each monitoring year, beginning in 2006.

The mitigation site was planted in spring 2005; 1,965 riparian plants (container stock) were installed on the site. Following plant installation, the contractors installed mulch around each planting. Belowground browse protection cages were installed at all riparian plantings. Aboveground cages were installed around some trees and shrubs.

In 2008 the Biotic Resources Group, under contract to Central Coast Wilds (CCW), monitored the mitigation site as per Year 4 protocols. The monitoring program consisted of reconnaissance inspections and a detailed monitoring session.

CCW performed maintenance of the mitigation site during this monitoring period. Maintenance activities included weeding, irrigation system maintenance and repair, trash clean-up, and repair of site vandalism. Several components of the site's irrigation system were vandalized by transients and people from the nearby homeless encampments. In addition, trash and debris, including human waste were deposited in the mitigation area by transients and occupants of the homeless encampments.

Summary of Year 4 (2008) Monitoring Results

The reconnaissance inspections revealed that plant health and survival was very good to excellent, as evidenced by observations of the plantings and plant growth. Maintenance of the mitigation site and each individual planting basin was rated good to excellent, as evidenced in most areas by a low amount of weed cover and maintenance/replenishment of mulch around the plantings.

The monitoring documented plant survival as well as environmental features within the riparian planting areas. The mulch at each riparian planting basin was in good condition. Weeds were minimal in the planting basins; however, the mitigation area supports infestations of invasive, non-native plants in close

proximity to the plantings. These infestations were reduced and controlled during the monitoring period, yet expanses of tree-of-heaven (an invasive tree) abut the mitigation plantings and continue to re-infest the mitigation area.

According to the mitigation and monitoring plan, the City is responsible for 70% survival for the planted trees and shrubs at the end of Year 4 (2008). As per the data collected during the 2008 monitoring, the Old Oakland Road Habitat Mitigation Project Site has met the required plant survival rates for all tree species as the tree survival rate is 82%. Collectively the shrub species have achieved a minimum 70% plant survival. Survival rates of both coyote brush and blackberry exceed 80%. Survival of original plantings of snowberry and mugwort, as well as replacement plants of California rose in 2007 met the 70% survival rate in 2008. Transient and homeless activity in the eastern portion of the mitigation area continues to affect plant growth and survival as plants get trampled. The majority of the container stock trees and shrubs were in good to excellent condition.

Riparian woodland sample plots documented the average Year 4 tree cover at 11% (an increase from 9.5% in 2007) and shrub cover at 45% (an increase from 39% in 2007. According to the mitigation and monitoring plan, the City is responsible for at least 8% tree cover and 5% shrub cover at the end of Year 4 (2008). The project plant cover values exceed the Year 4 performance standards outlined in the mitigation and monitoring plan.

Site maintenance activities (i.e., maintenance of planting areas, irrigation) are adequate to meet plant survival goals; yet the project area continues to be threatened by re-infestation of tree-of-heaven from nearby tree groves. In addition, the long-term viability of the mitigation area is threatened by the presence of multiple homeless encampments in the project area and their associated activities (i.e., deposition of trash, human, waste, vandalism). Human disturbances occurred within the mitigation area in 2008. These disturbances included plant vandalism, irrigation system vandalism, and deposition of debris within the planting area. Numerous homeless encampments occur within the Coyote Creek riparian corridor, which abuts the mitigation site. Trash, including human waste, was evident within the mitigation area in 2008. CCW cleaned up trash within the mitigation area throughout 2008. The City of San Jose Parks maintenance crews, with assistance from the City of San Jose Police Department's Metro Unit, removed a considerable amount of trash deposited by transients and homeless campers from the area; however, both the riparian corridor and the mitigation area continue to receive trash and human debris from camping activities and periodic dumping of debris. The presence of homeless encampments within the area is significantly degrading the value of the riparian woodland and negatively affects the mitigation area.

Summary of Recommendations for Year 5 (2009)

The site requires continued maintenance in Year 5 (2009) to ensure the required survival rate for the trees and shrubs. The replacement shrubs planted in 2007 will require supplemental irrigation in 2009. The current site maintenance activities (i.e., weeding, maintenance of planting areas, irrigation) are adequate to meet project goals; however, additional measures will be needed to control invasive trees/tree groves (tree-of-heaven) that abut the mitigation site. The site should continue to be weeded, with the control/removal of invasive, non-native plant species a high priority (i.e., jimson weed, poison hemlock, and thistle). Assuming plant survival is adequate in 2009, Year 5 should be the last year of site irrigation. Site maintenance will be needed in Year 5 to repair vandalism and remove debris and trash deposited by transients and homeless campers.

The City should retain the irrigation system throughout 2009. The system will require repair by City crews (e.g., replace existing backflow, replace/repair vandalized valve cages). Central Coast Wilds will repair/replace emitter, as needed.

The City should remove trees/tree groves of tree-of-heaven (invasive species) that abut the mitigation area. This tree removal plan is presented in Appendix A. The removal of these invasive trees will provide long-term benefits to the mitigation area, as tree-of-heaven can aggressively invade the mitigation area once maintenance activities cease.

The slope between Story Road and the mitigation site is virtually devoid of vegetation. Although this area is outside the designated mitigation area, plantings on this slope would benefit the riparian habitat and, over-time, create a wooded slope. Plantings native oak acorns on this slope would be an economical approach to establishing vegetation in this area. Approximately 50-75 acorn planting sites (2-4 acorns per site) are recommended.

Monitoring should follow the guidelines in the mitigation and monitoring plan, including a detailed plant survival count of riparian trees and shrubs, sample plots to document plant species survival, plant cover and tree height, and periodic reconnaissance inspections of the overall progress of the mitigation area. The Year 5 (2009) data should be compared to previous year data and the Year 5 performance standards.

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OLD OAKLAND ROAD HABITAT MITIGATION PROJECT
STORY ROAD MITIGATION SITE No. 2

HABITAT MITIGATION MONITORING REPORT

YEAR 4 (2008)

1.1 INTRODUCTION

The Old Oakland Road Habitat Mitigation Project is located at Story Road Mitigation Site No. 2 and encompasses 1.65 acres in central San Jose. The project area consists of a riparian revegetation area immediately southwest of Coyote Creek. The site is accessed from Story Road, approximately 0.75 mile west of State Highway 101. The project's location is depicted on Figure 1. The project site provides riparian mitigation for the Old Oakland Road Bridge Widening Project that was implemented by the City of San Jose.

The roadway-widening project was designed to minimize impacts to riparian resources; however, construction occurred in the riparian corridor and affected approximately 0.46 acre of riparian woodland and 0.27 acre of ruderal vegetation within the Coyote Creek corridor. These actions were outlined in the project's environmental documents and accompanying regulatory permits. The project was determined to have direct and indirect impacts on riparian resources. Due to impacts to these sensitive resources, the City developed specific environmental mitigation measures for the project. These measures include riparian habitat replacement and long-term maintenance and enhancement of a designated mitigation area; this area is depicted on Figure 2. Specific mitigation actions required for the site are addressed in the *Oakland Road Bridge Widening Mitigation and Monitoring Plan* (H.T. Harvey & Associates, November 12, 1997).

1.2 SUMMARY OF PROJECT PERMITS AND REQUIREMENTS

1.2.1 California Department of Fish and Game (CDFG) Agreement – RS-0167-98

The riparian habitats within the Old Oakland Road Bridge Widening project area are under the jurisdiction of the California Department of Fish and Game (CDFG) under 1602 of the California Fish and Game Code. As the project resulted in the removal of riparian woodland, the Fish and Game agreement specifies the revegetation of 1.65 acres of riparian woodland.

The riparian wetland mitigation area must be established and meet performance criteria by the end of Year 5. Yearly monitoring reports (to Year 5) are required to be submitted to CDFG following each monitoring year, beginning in 2006.

1.2.3 U.S. Army Corps of Engineers (ACOE) - NWP No. 23019S

The creek environs within the Old Oakland Road Bridge Widening project area are under the jurisdiction of the ACOE under Section 404 of the Clean Water Act. Although the widening project did not result in the permanent impacts to Waters of the U.S., including wetlands, the City secured a permit pursuant to the ACOE's Nationwide Permit requirements for demolition activities associated with the bridgework. To

mitigate these impacts, the Old Oakland Road Habitat Mitigation Project provides for the establishment of 1.65 acres of riparian woodland, consistent with NWP No. 23019S.

The mitigation must be established and meet performance criteria by the end of Year 10. Yearly monitoring reports (Years 1-6, Year 8 and Year 10) are required to be submitted to ACOE following each monitoring year, beginning in 2006.

1.2.4 Regional Water Quality Control Board Water Quality (RWQCB) Certification – No. 02-43-C0139

The creek environs within the Old Oakland Road Habitat Mitigation Project area is under the jurisdiction of the RWQCB under Clean Water Act Section 401 and the Porter-Cologne Water Quality Control Act. Demolition work had the potential to affect Waters of the State, so to mitigate these impacts and to be in compliance with RWQCB requirements the project includes mitigation for impacts to State waters through the establishment of 1.65 acres of riparian woodland at the Story Road Mitigation Site #2, consistent with waivers and consistency determinations for the project.

The mitigation must be established and meet performance criteria by the end of Year 10. Yearly monitoring reports (to Year 10) are required to be submitted to RWQCB following Years 1-6, Year 8, and Year 10, beginning in 2006.

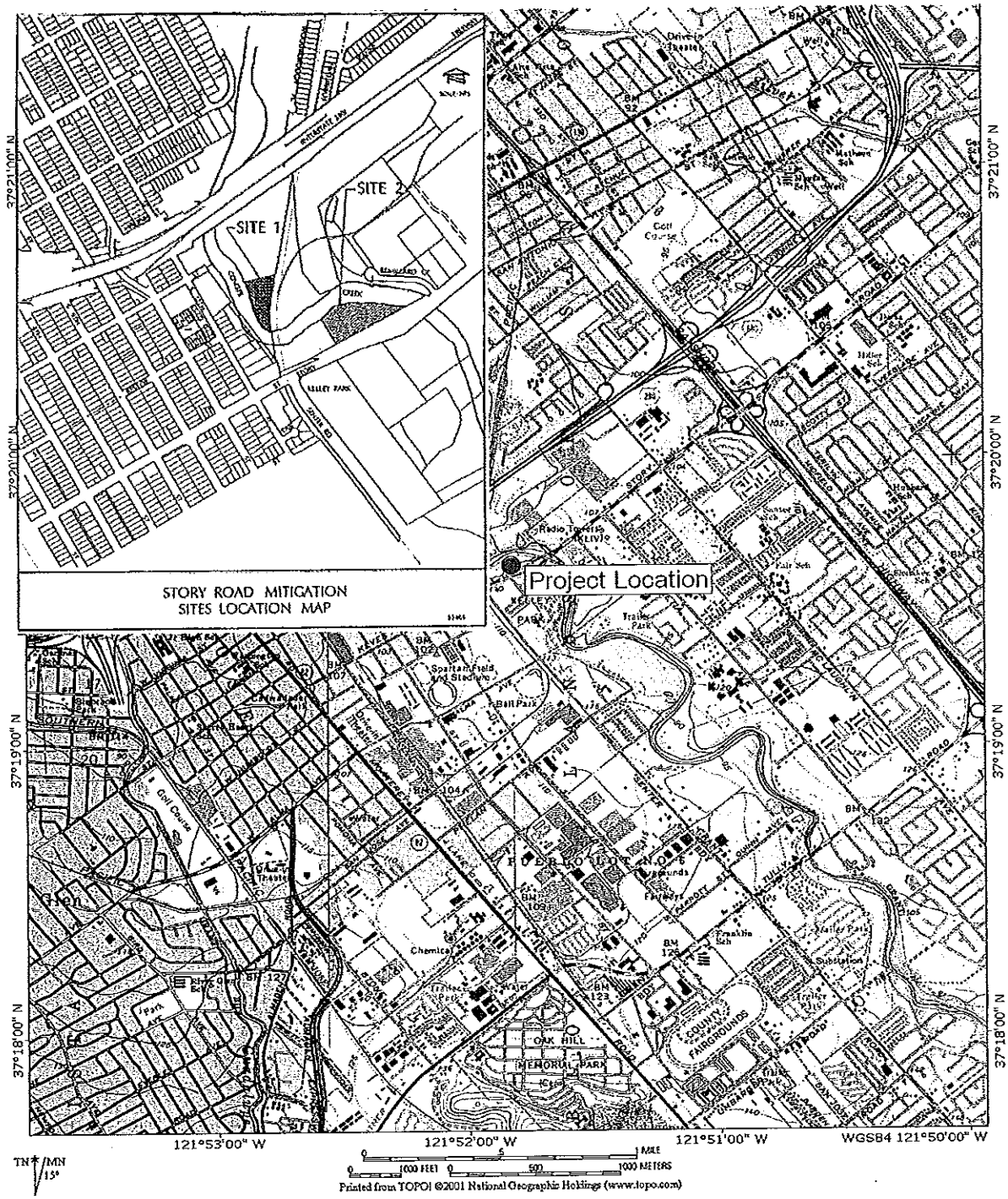
1.2.2 City of San Jose Planning Department - Environmental Review

The City of San Jose conducted environmental review of the project. The environmental document identified mitigation measures for biological resources, and consistent with other regulatory agency permit requirements identified the Story Road Mitigation Site No. 2 for the revegetation of 1.65 acres of riparian woodland. The mitigation area must be established and meet performance criteria by the end of Years 1-6, 8 and 10. Yearly monitoring reports (to Year 10) are to be prepared by the City following each monitoring year.

1.3 SUMMARY OF ENVIRONMENTAL MAINTENANCE REQUIREMENTS

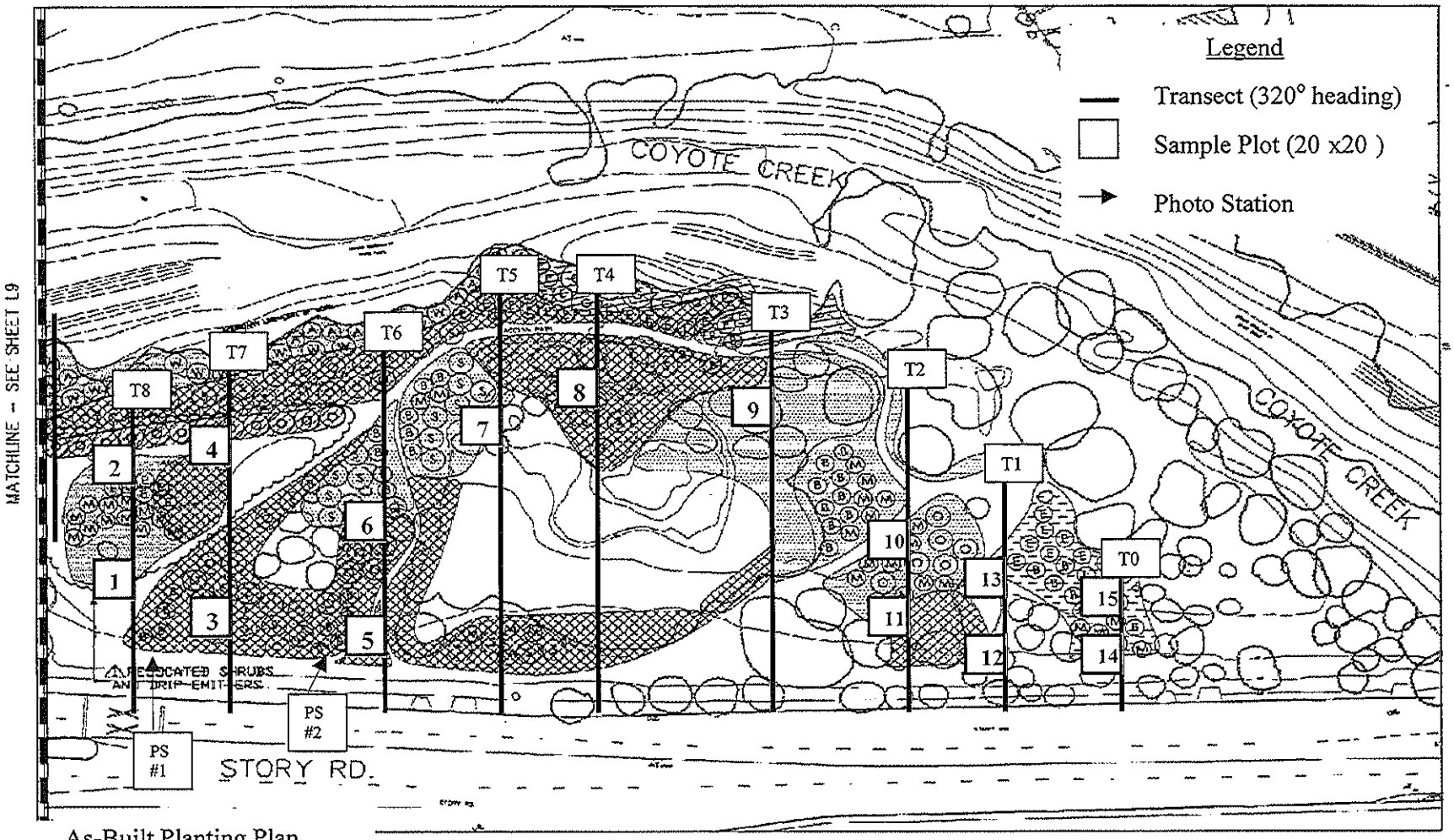
The mitigation requirements are derived from the City of San Jose' environmental documents and regulatory agencies permit conditions, the need to create a self-sustaining wetland and riparian mitigation area, and the need to maintain and manage the mitigation area within the projects 10-year reporting schedule. The mitigation requirements follow those outlined in the projects mitigation and monitoring plan (H.T. Harvey & Associates, 1997) and further specified in agency permits and conditions.

The implementation of the mitigation plan and subsequent maintenance and monitoring of the mitigation areas is designed to ensure project compliance with applicable permits and conditions of approval. This will be accomplished by implementing a 10-year maintenance and monitoring program, beginning in Year 1, such that plant survival rates are maximized and desired habitat features are achieved. The mitigation area will also be maintained to ensure compliance with restricted uses. The 10-year establishment period will maximize the potential for long-term plant survival within the mitigation area. The maintenance and monitoring program also includes the implementation of remedial actions on a yearly basis if plantings or habitats fail to meet performance standards or are not proceeding in a manner that will lead to the project meeting its 10-year requirements. The success of the maintenance and monitoring program will be documented monitoring on a yearly basis during Years 1-5, Year 6, Year 8, and Year 10.



Base Map : USGS Topographic Map, San Jose East

Biotic Resources Group 2551 S. Rodeo Gulch Road #12 ♦ Soquel, CA 95073 (831) 476-4803 ♦ Fax (831) 476-8038	Old Oakland Road Habitat Mitigation Story Road Mitigation Site No. 2 Year 4 (2008) Monitoring Report	Figure 1 12/08



As-Built Planting Plan
Source: Central Coast Wilds, 2005

Biotic Resources Group 2551 S. Rodeo Gulch Road #12 ◆ Soquel, CA 95073 (831) 476-4803 ◆ Fax (831) 476-8038	Old Oakland Road Habitat Mitigation Project – Story Road Mitigation Site #2 Year 4 (2008) Monitoring Report	Figure 2 12/08

1.4 SUMMARY OF REPORTING REQUIREMENTS

Under the requirements of the project's regulatory permits, the status of the mitigation area and its compliance with these permits/agreements must be reported in a yearly monitoring report. During Years 1-5, 6, 8 and 10, the yearly report is to be submitted to CDFG, ACOE, RWQCB and City of San Jose following each year's monitoring.

Each year's annual monitoring report shall contain a brief description of the project, methods used to collect and analyze the data, results of the data analysis, conclusions regarding the present conditions of the site and remedial actions to be implemented.

1.5 SUMMARY OF REVEGETATION ACTIVITIES IMPLEMENTED

Central Coast Wilds, a landscape contractor under contract to the City of San Jose, planted the site in spring 2005. A total of 1,965 container stock riparian plants were specified for installation, as listed on Table 1 (Central Coast Wilds, 2005). Following plant installation, the contractors installed mulch around each planting. Below and aboveground browse protection cages were installed at all plantings. Central Coast Wilds maintained the plantings throughout 2007.

The Biotic Resources Group, under contract to Central Coast Wilds, monitored the mitigation area in 2008 (Year 4). The monitoring program consisted of several reconnaissance inspections and detailed monitoring sessions as per Year 4 protocols. The results of the Year 4 monitoring are presented in this report. The report also identifies whether the project has met the Year 4 performance standards identified for the project and recommends remedial actions to ensure the project meets the project's long-term habitat goals.

Table 1. Plant Installation within Old Oakland Road Habitat Mitigation, Story Road Mitigation Site No. 2

Scientific Name	Common Name	Container Size	Number of Plants Installed in 2005
Acer negundo	Box elder	Tree pot	41
Aesculus californica	California buckeye	Tree pot	41
Platanus racemosa	California sycamore	Tree pot	41
Quercus agrifolia	Coast live oak	Tree pot	41
Sambucus mexicana	Blue elderberry	Tree pot	42
Populus fremontii	Fremont cottonwood	Tree pot	17
Salix sp.	Willow	Tree pot	34
Tree Subtotal			**257**
Baccharis pilularis	Coyote brush	Dee pot	497
Rubus ursinus	California blackberry	Dee pot	497
Symphoricarpos albus	Snowberry	Dee pot	497
Artemisia douglasiana	Mugwort	Dee pot	217
Shrub Subtotal			**1,708**
TOTAL			**1,965**

1.6 METHODOLOGY

The Old Oakland Road Habitat Mitigation Project at Story Road Mitigation Site No.2 was visited for reconnaissance inspections on January 15, April 16, June July 11, September 3, 12 and 13, 2008. Kathleen Lyons of the Biotic Resources Group conducted these inspections. At the inspection sessions,

general environmental features of the mitigation site were noted as well as general plant species performance and area maintenance.

In September 2008, detailed monitoring sessions were conducted to document the riparian plantings. At the monitoring session, permanent sampling plots that were established in Year 1 (2005) were re-sampled. Fifteen (15) sampling plots, each measuring 20 feet by 20 feet (totaling 400 square feet), located along nine transects, were sampled. The southeast corner of each plot is marked in the field with a wooden stake, painted with orange paint and labeled with the plot number. The location and orientation of each sample plot is depicted on Figure 2. Within each plot, plant survival, plant health, vigor and height, and vegetative cover was recorded. The rating system used for plant health and vigor is listed on Table 2. A plant count, noting plant survival by species, was conducted for the entire mitigation area.

Table 2. Plant Health and Vigor Rating System, Old Oakland Road Habitat Mitigation Project at Story Road Mitigation Site No. 2

Code	Rating	Health Characteristics	Vigor Characteristics
4	Excellent	75-100% healthy foliage	Vigorous new growth observed throughout plant
3	Good	50-74% healthy foliage	Vigorous new growth observed only at terminal bud
2	Fair	25-49% healthy foliage	No new growth evident
1	Poor	0-24% healthy foliage	Stem dieback observed

The mitigation area was also evaluated as to site maintenance and other disturbances. Photographs documenting each the permanent sampling plots and the overall condition of the mitigation plantings were taken. Two photo stations were established. The location of the photo stations is depicted on Figure 2.

1.7 MONITORING RESULTS

1.7.1 Reconnaissance Inspections

The reconnaissance inspections of the mitigation area documented the status of plant growth and maintenance activities, as well as the general progress of the revegetation efforts. Figures 3 and 4 depict the typical condition of the planting area in Year 1 (October 2005) and Year 4 (September 2008).

During Year 4 (2008) the mitigation plan requires competition from weeds and/or invasive, non-native plant species within the planting basins be minimized. The basins are required to be controlled for weeds during the growing season. In addition, weeds and/or invasive, non-native plant species within other portions of the mitigation area (i.e., areas outside of planting basins, yet within the overall mitigation area) are to be minimized to maximize plant survival and desired habitat features. The 2008 reconnaissance inspections documented adherence to these maintenance requirements.

Figure 3. View of westernmost portion of riparian planting area, October 2005. (Photo station #1)

Figure 4. View of westernmost portion of riparian planting area, September 2008. (Photo station #1)

The reconnaissance inspections revealed that plant health and survival was good to very good, as evidenced by observations of the plantings and plant growth. Maintenance of the mitigation area and each individual planting basin was rated very good, as evidenced in most areas by a low amount of weed cover and maintenance of mulch around the plantings.

Individuals of tree-of-heaven (*Ailianthus altissima)*, an invasive, non-native tree, were documented immediately adjacent to plantings, although maintenance activities were implemented to control this species.

1.7.2 Plant Survival Monitoring within Riparian Planting Area

Detailed monitoring of the riparian plantings was conducted in September 2008. The monitoring was conducted approximately 3.5 years after the plantings were installed. A summary of the monitoring results is presented in Table 3. The monitoring documented plant survival as well as environmental features within each of the planting areas. Human disturbances were documented to be plant vandalism (i.e., breaking off tree stems) and debris; some planting areas could not be accessed safely due to human waste. The mulch at each riparian planting basin was in good condition. Most shrub and tree plantings

had their mulch replenished in 2008 and, as such, weeds were minimal in the planting basins. The irrigation was operational despite being vandalized several times during the summer. Transients opened valve covers and taped into the water lines with hoses to use water; a hose shower was erected within the mitigation area. CCW maintenance crews removed these features and repaired several acts of vandalism. In September, after more irrigation valves were broken the water system was turned off.

Table 3. Summary of Year 4 (2008) Plant Survival Data within Old Oakland Road Habitat Mitigation Project at Story Road Mitigation Site No. 2

Plant Species	Number of Plants Installed (Spring 2005)	Number of Plants Alive (9/08)	Percent Survival in Year 3 (9/08)	Percent Survival Required in Habitat Mitigation and Monitoring Plan	Number of Plants to Install in to Meet Survival Rate Per Species
Trees					
Box Elder	41	41	100%	70%	0
California Buckeye	41	30	73%	70%	0
California Sycamore	41	36	87%	70%	0
Coast Live Oak	41	36	87%	70%	0
Blue Elderberry	42	32	76%	70%	0
Fremont Cottonwood	17	12	71%	70%	0
Willow	34	24	71%	70%	0
Tree Total	**257**	**211**	**82%**	**70%**	**0**
Shrubs					
Coyote Brush	497	400±	80%	70%	0
California Blackberry	497	400 ±	80%	70%	0
Snowberry	497	361	72%	70%	0
Mugwort	217	52			
California Rose*		102			
Shrub Total	**1,708**	**1,315**	**77%**	**70%**	**0**

*Replacement plants installed in November 2006 and 2007.

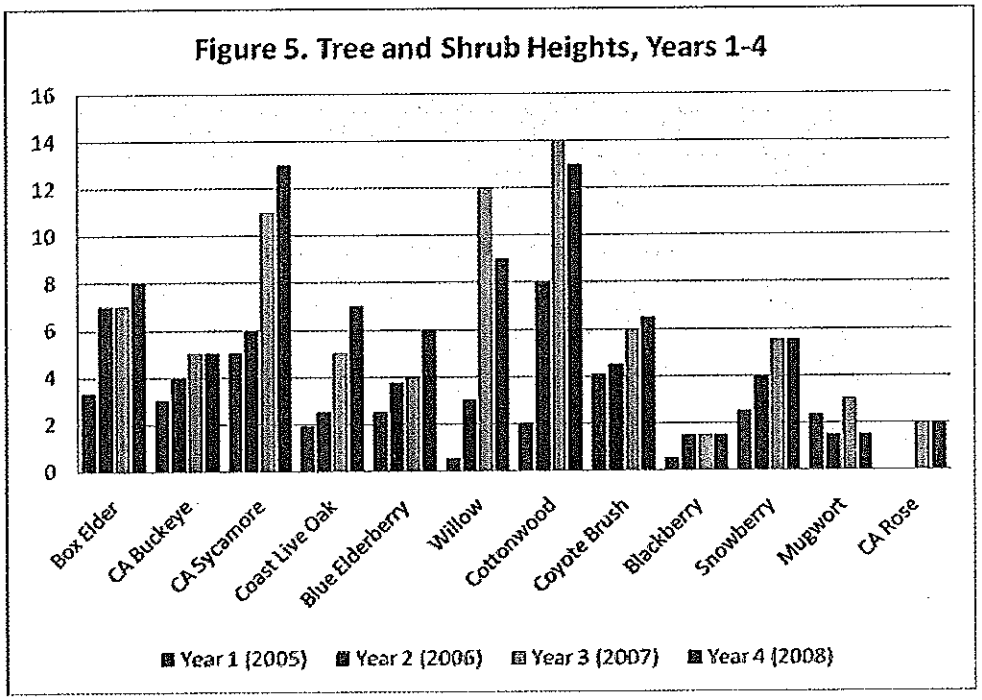
Within the riparian planting area 1,965 plantings were specified in the mitigation and monitoring plan. During the 2008 monitoring session 1,526 planting sites contained trees and shrubs that were alive, yielding a 77% survival rate (all species, Table 3). Box elder, California sycamore, and coast live oak had the highest survival rate at 100% and 87%, respectively. Blue elderberry followed with a survival rate of 76%; other trees are California buckeye (73%) and willow (71%). The shrubs met the 70% survival rate performance standard, as California rose replacement plantings were installed in 2006 and 2007.

Based on the data from the fifteen sample plots, the monitoring documented that most plants exhibited very good to excellent health and vigor (Table 4), with most species displaying high vigor and excellent health. Of the trees, California sycamores were the tallest at 14 feet. Fremont cottonwood and willow trees are located outside the sample plots and average13 feet and 9 feet, respectively. Box elders average 8 feet tall while coast live oaks average 7.0 feet. Blue elderberries average 6 feet and buckeyes average 5 feet tall. For the shrubs, coyote brush averaged 6.5 feet, followed by snowberry (5.5 feet), California rose (2 feet), mugwort (1.5 feet) and California blackberry (1.5 feet). As depicted on Table 4, the tree species have met or exceed their Year 4 (2008) height requirement/performance standard. Figure 5 displays the trend in plant height between Year 1 (2005) and Year 4 (2008).

Table 4. Sample Plot Data within Old Oakland Road Habitat Mitigation Project at Story Road Mitigation Site No. 2 - Year 4 (2008)

Plant Species	Average Height (Feet)	Average Vigor	Average Health	Tree Height Performance Standard for Year 4 (2008)
Box elder	8.0	4.0	4.0	**
California buckeye	5.0	4.0	4.0	5.0
California sycamore	13.0	4.0	4.0	8.0
Coast live oak	7.0	4.0	4.0	4.0
Blue elderberry	6.0	3.6	3.6	5.0
Fremont cottonwood	13.0*	4.0	4.0	12.0
Willow	9.0	4.0	4.0	8.0
Coyote Brush	6.5	4.0	4.0	-**
California blackberry	1.5	4.0	4.0	-**
Snowberry	5.5	3.5	3.5	-**
Mugwort	1.5	3.0	3.0	-**
California Rose	2.0	3.6	3.6	-**

* Height determined from trees located outside of plots, as species not represented in sample plots
** Height data for this species is not listed in HMMP



1.7.3 Permanent Sample Plot Monitoring

As per the mitigation and monitoring plan, the progress of the riparian planting area must be documented through permanent plots. The plan specifies a minimum of fifteen plots be established along a minimum of eight transects. In September 2008 data was collected on plant survival, plant cover (percent cover), and plant height at the fifteen plots. Site maintenance, plant health and vigor and natural recruitment of native and non-native woody species were also noted. Photographs were taken from the southeast corner of each sampling plot; these photos, with a comparison to the Year 1 (2005) conditions are depicted in Figures 7-21.

Within the planting area, herbaceous plant cover averaged 44%, which is a decrease from 50% in 2007. Shrub cover averaged 45%, an increase from 39% in 2007. Tree cover averages 11%, an increase from 9.5% in 2007 (Table 5). These data continues to show a decrease in herbaceous cover and increases in both shrub and tree cover indicative of developing riparian woodland. Figure 6 displays the trend in increasing shrub and tree cover since plant installation.

Table 5. Sample Plot Data on Plant Cover within Old Oakland Road Habitat Mitigation Project at Story Road Mitigation Site #2 – Year 4 (2008)

	Percent Relative Cover (%)						
Plot Number	Herbaceous /Bare	Shrub	Tree	Plot Number	Herbaceous /Bare	Shrub	Tree
1	25%	60%	15%	9	50%	50%	10%
2*	5%	90%	0%	10	50%	40%	10%
3	10%	75%	15%	11	75%	20%	5%
4	30%	70%	0%	12	20%	75%	10%
5	40%	30%	30%	13	75%	20%	10%
6	50%	30%	20%	14	90%	10%	0%
7	40%	50%	10%	15	80%	10%	10%
8	30%	50%	20%	**Average**	**44%**	**45%**	**11%**

* Viewed in cursory manner due to presence of human waste

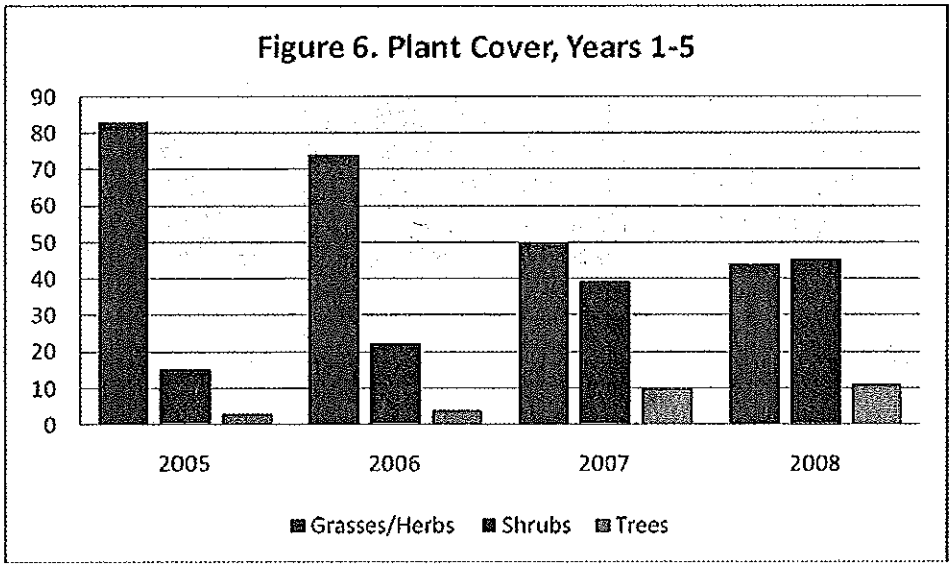


Figure 7A. View of Sample Plot 1, October 2005. Sample plot contains 7 plants; 3 coyote brush, 1 blackberry and 2 box elders. One empty planting area was noted. Herbaceous/bare cover is 80%; shrub cover is 10% and tree cover is 10%.

Figure 7B. View of Sample Plot 1, September 2007. Herbaceous/bare cover is 25%; shrub cover is 60% and tree cover is 15%.

Figure 8A. View of Sample Plot 2, October 2005. Sample plot contains 14 plants (all alive), consisting of 7 blackberries and 7 coyote brush. Herbaceous/bare cover is 60%; shrub cover is 40% and tree cover is 0%.

Figure 8B. View of Sample Plot 2, September 2008. Herbaceous/bare cover is 5%; shrub cover is 90% and tree cover is 0%. Weeds include tree-of-heaven.

Figure 9A. View of Sample Plot 3, October 2005. Sample plot contains 10 plantings (all alive), consisting of 4 coyote brush, 2 coast live oaks, 3 blackberries and 1 sycamore. Herbaceous/bare cover is 79%; shrub cover is 20% and tree cover is 1%.

Figure 9B. View of Sample Plot 3, September 2008. Herbaceous/bare cover is 10%; shrub cover is 75% and tree cover is 15%.

Figure 10A. View of Sample Plot 4, October 2005. Sample plot contains 7 plantings (all alive), consisting of 7 coyote brush. Herbaceous/bare cover is 60%; shrub cover is 40% and tree cover is 0%.

Figure 10B. View of Sample Plot 4, September 2008. Herbaceous/bare cover is 30%; shrub cover is 70% and tree cover is 0%.

Figure 11A. View of Sample Plot 5, October 2005. Sample plot contains 10 plantings (8 alive, 2 dead), consisting of 1 blackberry, 3 sycamore, 4 snowberry and 2 empty sites. Herbaceous/bare cover is 98%; shrub cover is 1% and tree cover is 1%.

Figure 11B. View of Sample Plot 5, September 2008. Herbaceous/bare cover is 40%; shrub cover is 30% and tree cover is 30%.

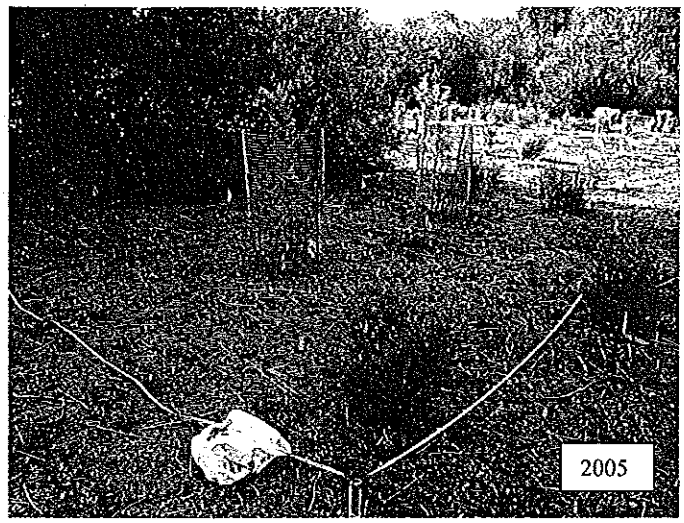


Figure 12A. View of Sample Plot 6, October 2005. Sample plot contains 5 plantings (all alive), consisting of 1 coyote brush, 1 blackberry, 1 coast live oak, 1 willow and 1 sycamore. Herbaceous/bare cover is 94%; shrub cover is 5% and tree cover is 1%.

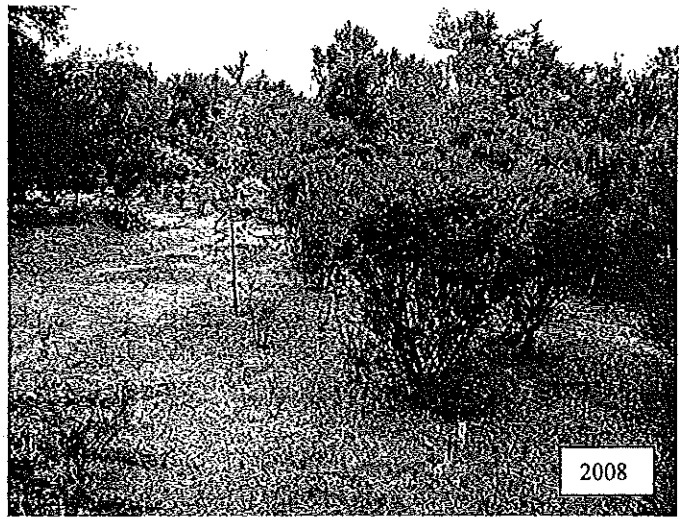


Figure 12B. View of Sample Plot 6, September 2008. Herbaceous/bare cover is 50%; shrub cover is 30% and tree cover is 20%.

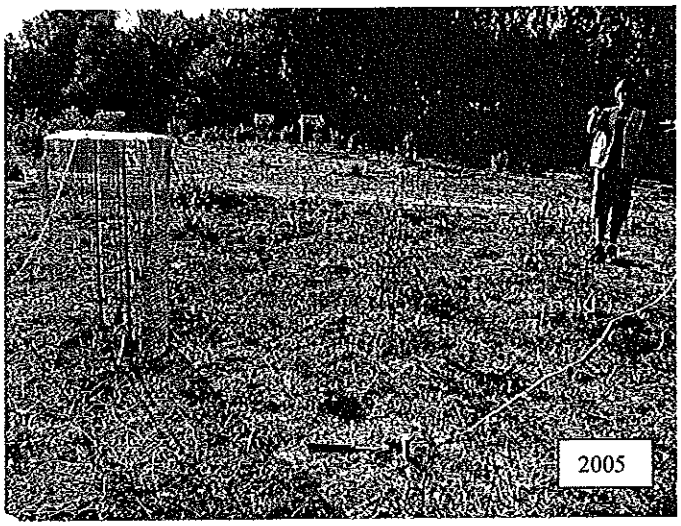


Figure 13A. View of Sample Plot 7, October 2005. Sample plot contains 9 plantings (all alive), consisting of 9 snowberries. Herbaceous/bare cover is 80%; shrub cover is 20% and tree cover is 0%.

Figure 13B. View of Sample Plot 7, September 2008. Herbaceous/bare cover is 40%; shrub cover is 50% and tree cover is 10%.

Figure 14A. View of Sample Plot 8, October 2005. Sample plot contains 5 plantings (all alive), consisting of 1 box elder, 3 snowberries and 1 sycamore. Herbaceous/bare cover is 94%; shrub cover is 1% and tree cover is 5%.

Figure 14B. View of Sample Plot 8, September 2008. Herbaceous/bare cover is 30%; shrub cover is 50% and tree cover is 20%.

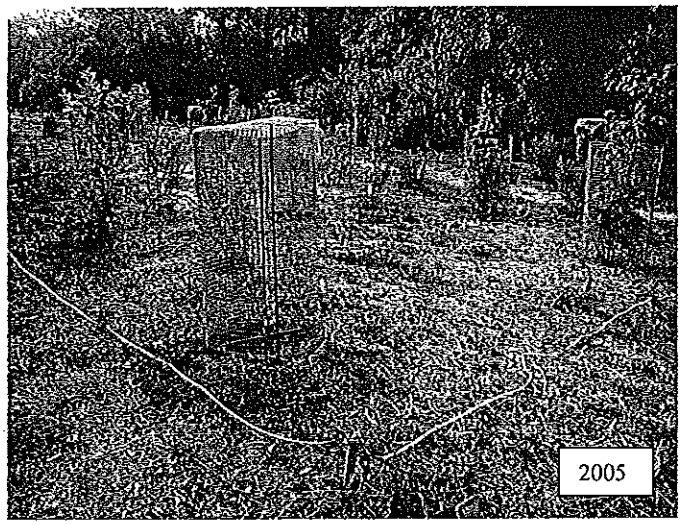


Figure 15A. View of Sample Plot 9, October 2005. Sample plot contains 10 plantings (9 alive, 1 dead), consisting of 2 buckeyes, 2 blackberries, 1 box elder, 4 coyote brush and 1 empty site. Herbaceous/bare cover is 79%; shrub cover is 20% and tree cover is 1%.

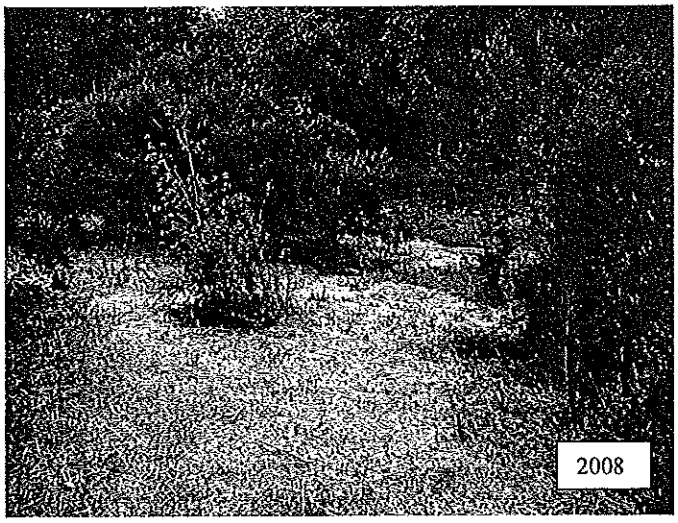


Figure 15B. View of Sample Plot 9, September 2008. Herbaceous/bare cover is 40%; shrub cover is 50% and tree cover is 10%.

Figure 16A. View of Sample Plot 10, October 2005. Sample plot contains 11 plantings (8 alive, 3 dead), consisting of 5 snowberry, 1 coyote brush, 1 blue elderberry, 1 buckeye and 3 empty sites. Herbaceous/bare cover is 90%; shrub cover is 5% and tree cover is 5%.

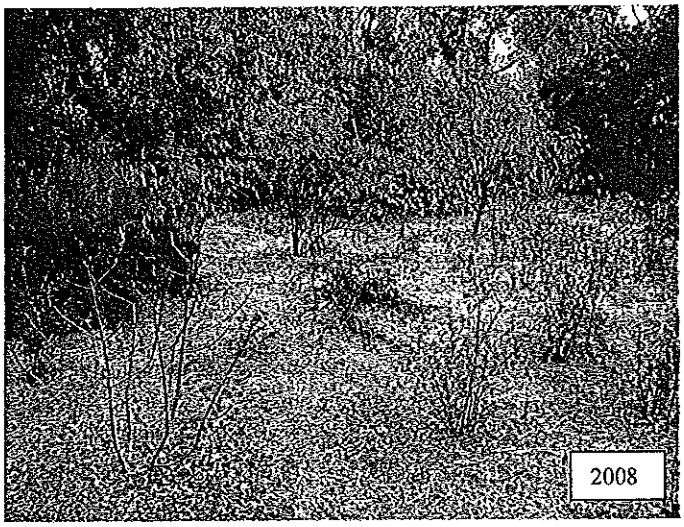


Figure 16B. View of Sample Plot 10, September 2007. Herbaceous/bare cover is 50%; shrub cover is 40% and tree cover is 10%.

Figure 17A. View of Sample Plot 11, October 2005. Sample plot contains 8 plantings (7 alive, 1 dead), consisting of 1 box elder, 6 snowberries and 1 empty site.
Herbaceous/bare cover is 90%; shrub cover is 5%, tree cover is 5%.

Figure 17B. View of Sample Plot 11, September 2008. Herbaceous/bare cover is 75%; shrub cover is 20%, tree cover is 5%.

Figure 18A. View of Sample Plot 12, October 2005. Sample plot contains 12 plantings (11 alive, 1 dead), consisting of 2 mugwort, 7 snowberries, 1 box elder, 1 buckeye and 1 empty site. Herbaceous/bare cover is 89%; shrub cover is 10%, tree cover is 1%.

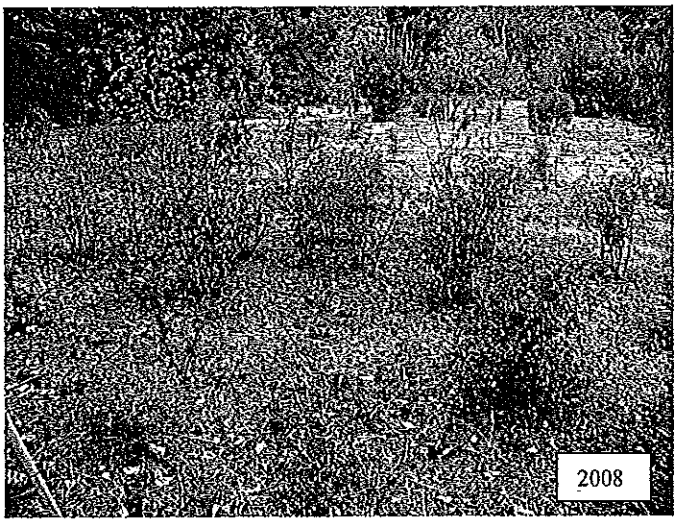


Figure 18B. View of Sample Plot 12, September 2008. Herbaceous/bare cover is 20%; shrub cover is 75%, tree cover is 10%.

Figure 19A. View of Sample Plot 13, October 2005. Sample plot contains 10 plantings (9 alive, 1 dead), consisting of 5 snowberries, 1 coast live oak, 1 blue elderberry, 1 box elder, 1 coyote brush and 1 empty site. Herbaceous/bare cover is 94%; shrub cover is 5%, tree cover is 1%.

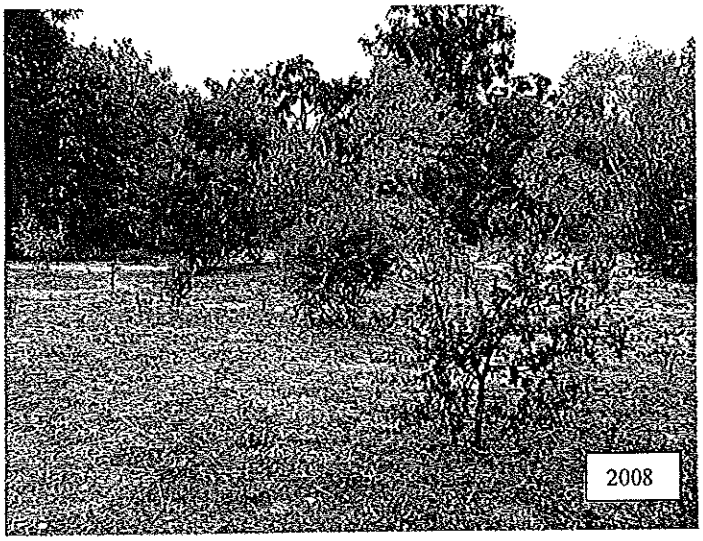


Figure 19B. View of Sample Plot 13, September 2008. Herbaceous/bare cover is 75%; shrub cover is 20%, tree cover is 10%.

Figure 20A. View of Sample Plot 14, October 2005. Sample plot contains 10 plantings (9 alive, 1 dead), consisting of 8 mugwort, 1 blue elderberry, and 1 empty site. Herbaceous/bare cover is 90%; shrub cover is 10%, tree cover is 0%.

Figure 20B. View of Sample Plot 14, September 2008. Herbaceous cover and bare is 90%; shrub cover is 10%, tree cover is 0%. Weeds include tree-of-heaven.

Figure 21A. View of Sample Plot 15, October 2005. Sample plot contains 8 plantings (all alive), consisting of 6 mugwort and 2 buckeyes. Herbaceous/bare cover is 60%; shrub cover is 39%, tree cover is 1%.

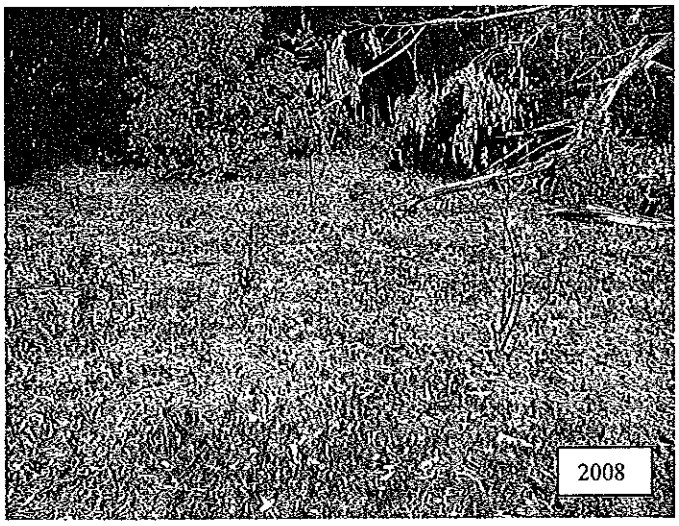


Figure 21B. View of Sample Plot 15, September 2008. Herbaceous/bare cover is 80%; shrub cover is 10%, tree cover is 10%.

1.8 CONCLUSIONS AND RECOMMENDATIONS

Maintenance is necessary in Year 5 (2009) to ensure the required survival rate for the installed trees and shrubs. The current site maintenance activities (i.e., weeding, maintenance of planting areas, irrigation) are adequate to meet project goals; however, additional measures to remove trash, debris and repair vandalism. Such actions will reduce the impact that transients and homeless campers pose to the mitigation area.

According to the mitigation and monitoring plan, the City is responsible for 70% survival for the planted trees and shrubs at the end of Year 4 (2008). Table 6 outlines the performance standards for this mitigation site. As per the data collected during the September 2008 monitoring, the Old Oakland Road Habitat Mitigation Project Site has met the required plant survival rates for all species. No replacement plantings are necessary. The majority of the trees and shrubs were in good to excellent condition. Year 5 should be the last year of site irrigation.

Riparian woodland sample plots documented the Year 4 tree cover at 11% and shrub cover at 45%; these values exceed the performance standards for Year 4 as set forth in the mitigation and monitoring plan.

Site maintenance activities (i.e., weed-whipping, maintenance of planting areas, irrigation) are adequate to meet project goals. Site maintenance is required to continue to control weeds, including invasive, non-native plant species (tree-of-heaven and thistles) between the riparian plantings and within the planting basins. Although trees and re-sprouts of this tree-of-heaven were removed from the mitigation site prior to plant installation and during the Year 1-4 maintenance period, seeds and suckers from the adjacent trees continue to re-colonize the mitigation area. These invasive trees pose a long-term threat to the mitigation area, particularly when site maintenance ceases.

After Year 5, future actions will be limited to maintenance (periodic trash and debris removal, including control/removal of homeless encampments) and habitat monitoring sessions in Years 6, 8, and 10.

Table 6. Performance Standards for Years 1-6, Year 8 and Final Success Criteria for Year 10

RIPARIAN WOODLAND								
	Yr1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 8	Yr 10
Tree Cover (%)	-	2	4	8	15	25	35	50
Shrub Cover (%)	-	1	3	5	7	10	15	20
Plant Survival (%)	80	80	80	70	70	-	-	-
Tree Height (feet)								
Arroyo Willow	-	3	5	7	9	11	13	15
Red Willow	-	3	5	8	11	14	17	20
Fremont Cottonwood	-	6	9	12	15	18	24	30
Blue Elderberry	-	3	4	5	6	7	9	10
Coast Live Oak	-	2	3	4	5	7	9	11
California Buckeye	-	3	4	5	6	7	9	10
Box Elder	-	-	-	-	-	-	-	-
California Sycamore	-	3	5	8	11	14	17	20

Source: Oakland Road Bridge Widening Mitigation and Monitoring Plan, 1997

1.8.1 Recommendations for Year 5 (2009) – Year 10 (2014)

The following actions are recommended for Year 5 (2009) through Year 10 (2014) to ensure project compliance and riparian revegetation success:

1. **Irrigate Replacement Plantings within Riparian Planting Area.** Replacement plants (those installed in 2007 and the previous year's replacement plants) should continue to be irrigated through Year 5 (2009). Irrigation should begin in April and continue through October, depending upon weather and soil moisture. Assuming plant survival is adequate in the next year, Year 5 should be the last year of site irrigation.

2. **Weed and Maintain Planting Area.** All riparian plantings should continue to be weeded; the weeding should include the removal of weeds from the individual planting basins, hand removal of spot occurrences of thistle, poison hemlock, tree-of-heaven and other weeds, and seasonal weed whipping between plantings to control other weeds. The first weed whipping should be conducted in the spring prior to the bud formation on thistle. Weed whipping of plants shall occur later in the year to further control weed growth.

3. **Remove Tree of Heaven that Abuts Mitigation Area.** Groves of tree-of-heaven (invasive species) that abut the mitigation area should be removed to keep them from spreading into the mitigation area. The removal of these invasive trees will provide long-term benefits to the mitigation area, as tree-of-heaven can aggressively invade the mitigation area once maintenance activities cease. See Appendix A.

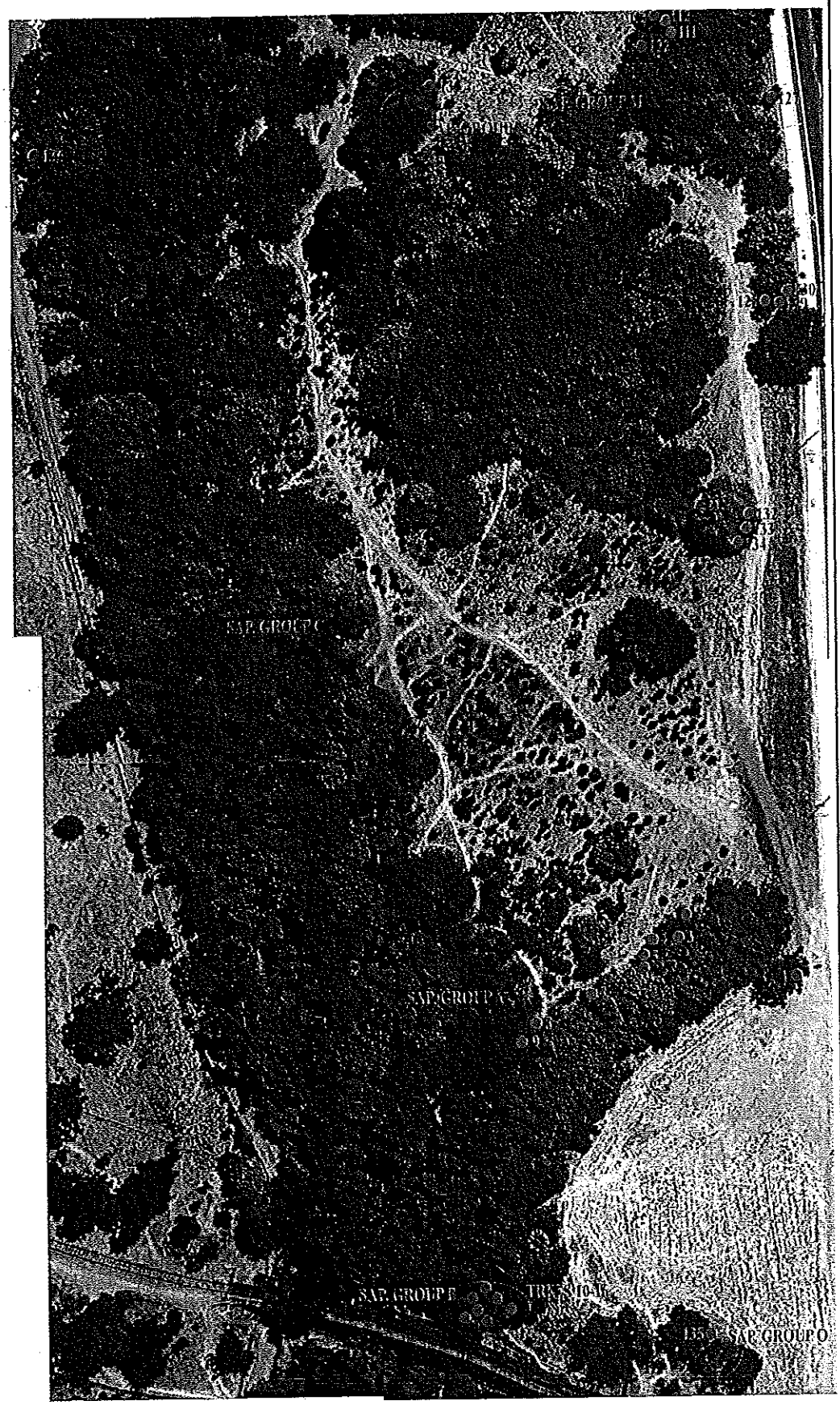
4. **Revegetate Road Embankment Adjacent to Story Road.** The slope between Story Road and the mitigation site is virtually devoid of vegetation. Although this area is outside the designated mitigation area, plantings on this slope would benefit the riparian habitat and, over-time, create a wooded slope. Plantings native oak acorns on this slope would be an economical approach to establishing vegetation in this area. Approximately 50-75 acorn planting sites (2-4 acorns per site) are recommended.

5. **Vandalism, Trash, and Homeless Encampments.** Periodic inspections are necessary to detect site vandalism and habitat disruption and degradation caused by transients and homeless encampments. As evidenced in 2008 the site is located adjacent to several large homeless encampments within/along the Coyote Creek corridor and homeless encampments have established within the mitigation area in 2008. The SJPD Metro Unit should conduct periodic enforcement sweeps to remove/control these encampments. Park maintenance crews should implement periodic creek clean-ups for the area.

6. **Year 5, 6, 8 and 10 Monitoring.** A qualified biologist should conduct reconnaissance and detailed monitoring surveys to document the condition of the mitigation area, the plantings, and to determine if any remedial actions are necessary. Monitoring should follow the guidelines in the mitigation and monitoring plan for Years 5, 6, 8, and 10. The data from the plant survival counts and riparian sample plot data should be compared to previous year data and the yearly performance standards.

Appendix A

Tree-of-Heaven Removal Plan



LEGEND

- Indicates a mature tree.

Shaded areas indicated a group of saplings.

DEFINITIONS

Sapling:
A tree of less than 2 inches in diameter.

Mature Tree:
A tree of greater than 2 inches in diameter.

NOTES

Mature trees are labeled with a number. Height, # of trunks, and DBH for mature trees can be found on SHEET R5

Sapling groups are labeled with a letter. The number of Saplings in a group can be found on SHEET R5

Central Coast Wilds
114 Liberty Street
Santa Cruz, CA 95060
Office: (831) 459.0656
Fax: (831) 457.1606
www.CentralCoastWilds.com

Story Road Mitigation Site
Tree of Heaven
Removal Plan
SITE #2, PART 1

	Designed: JIF	Project Number:
	Drawn: ABM	Scale: As Shown
	Checked: JIF	Drawing Number:
	Reviewed: JIF	Sheet R2
	Date: 3/1/2005	

LEGEND

- Indicates a mature tree.

Shaded areas indicated a group of saplings.

DEFINITIONS

Sapling:
A tree of less than 2 inches in diameter.

Mature Tree:
A tree of greater than 2 inches in diameter.

NOTES

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Story Road Mitigation Site
Tree of Heaven
Removal Plan
SITE #2, PART 2

	Designed: JTF	Project Number:
	Drawn: ABM	Scale: As Shown
	Checked: JTF	Drawing Number:
	Reviewed: JTF	Sheet R3
	Date: 2/17/2018	